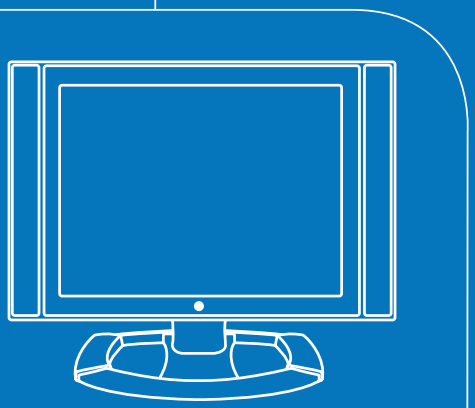
USER'S MANUAL



20" Personal LCD TV
model LTV-20v2

Westinghouse

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IMPORTANT PRODUCT SAFETY INSTRUCTIONS

Follow and obey all warnings and instructions marked on your product. For your safety, please read all the safety and operating instructions before you operate this product. Keep this user's manual for future reference.

Overloading
Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in fire or electronic shock.

Power Cord Protection
Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords near plugs, convenience receptacles, and the point where they exit from the product.

Ventilation
Slots and openings on the cabinet are provided for ventilation purposes.
To ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered.

- Do not block the openings by placing the product on a bed, sofa, rug or other similar surface.
- Do not place the product in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instruction have been adhered to.

Other Notices
Avoid exposing the LCD display to direct sunlight or high temperatures.
Avoid exposing the LCD display to moisture or high humidity.
Do not attempt repairs yourself. Your warranty does not cover repairs or attempted repairs by anyone not authorized by manufacturer.
If your LCD Display will not be used for a long period of time, unplug and remove the batteries from the remote control.

Precautions
Sit at least 20" away from your LCD display.
Avoid touching the screen. Skin oils are difficult to remove.
Never remove the rear cover. Your LCD display contains high-voltage parts. You may be seriously injured if you touch them.

- Avoid exposing your LCD display to direct sunlight or another heat source. Orient your LCD display away from direct sunlight to reduce glare.
- Always handle your LCD display with care when moving it.
- Place your LCD display in a well-ventilated area. Do not place anything on your LCD display that prevents heat dissipation.
- Ensure that the area around the LCD display is clean and free of moisture.
- Do not place heavy objects on the LCD display, video cable, or power cord.
- If smoke, abnormal noise, or strange odor is present, immediately switch the LCD display off and call your dealer or manufacturer. It is dangerous to continue using the LCD display.

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Table of Contents

IMPORTANT PRODUCT SAFETY INSTRUCTIONS 2

ANTENNA INSTALLATION SAFETY 3
CLEANING THE LCD DISPLAY 3
SAFETY GUIDELINES 4
FCC COMPLIANCE STATEMENT 4

INSTALLATION 5

1. INSERT REMOTE CONTROL BATTERIES 5
2. REAR COVERS 5
3. CONNECT ANTENNA, CABLE, VIDEO, S-VIDEO, AND/OR YPBPR CABLES 6
4. CONNECT POWER CABLES 7
5. TURN POWER ON 7
6. PROGRAMMING CHANNELS 8

CONTROLS & CONNECTIONS 9

FRONT VIEW OF THE PRODUCT 9
REAR VIEW OF THE PRODUCT 10
REMOTE CONTROL 11

OSD FUNCTIONS 12

SOURCE INPUT: TV OR AV OR S-VIDEO 13
Main Picture Menu 13
Multi Screen Menu 13
OSD Menu 15
TV Menu 16
Audio Menu 16
Parental Control Menu 17
Password Edit Menu 17
TV Rating Menu 18
MOVIE Rating Menu 18
SOURCE INPUT: COMPONENT 19
Main Picture Menu 19

APPENDIX 20

SPECIFICATIONS 20
TROUBLESHOOTING 21
No power 21
Power is ON but no screen image 21
Wrong or abnormal colors 21
Snow appears on screen 21
No sound 21
Remote control does not work 21
Remote control code not found in "universal" remote 21
How do I mount the LCD TV on a wall 21
How do I find more help? 21

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Antenna Installation Safety

Outdoor Antenna Grounding
If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANS/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Lightning
For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges. Do not disconnect the antenna or the power cord during a heavy storm – lightning may strike while you are holding the cable cord, causing serious injury. Turn off your LCD display and wait for the weather to improve.

Power Lines
An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them may be fatal.

Cleaning the LCD Display

- **MAKE SURE THE LCD DISPLAY IS TURNED OFF**
- **NEVER SPRAY OR POUR ANY LIQUID DIRECTLY ONTO THE SCREEN OR CASE**

To clean the screen:
1. Wipe the screen with a clean, soft, lint-free cloth. This removes dust and other particles.
2. If still not clean, apply a small amount of non-ammonia, non-alcohol based glass cleaner onto a clean, soft, lint-free cloth, and wipe the screen.

To clean the case:
1. Use a soft, dry cloth.
2. If still not clean, apply a small amount of non-ammonia, non-alcohol based, mild non-abrasive detergent onto a clean, soft, lint-free cloth, then wipe the surface.

Disclaimer
Manufacturer does not recommend the use of any ammonia or alcohol-based cleaners on the LCD display screen or case. Some chemical cleaners have been reported to damage the screen and/or LCD display case. Manufacturer will not be liable for damage resulting from use of any ammonia or alcohol-based cleaners.

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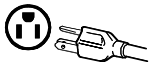
Safety Guidelines

Warning: This device must be operated with the original power supply, part number: ADP-60CF A.
CAUTION: The socket-outlet should be installed near the equipment and should be easily accessible.
CAUTION: Use a power cable that is properly grounded. Always use the appropriate AC cord that is certified for the individual country. Some examples are listed below:

USA.....UL
Canada.....CSA
Germany.....VDE
Switzerland ..... SEV
Britain ..... BASE/BS
Japan ..... Electric Appliance Control Act

IMPORTANT NOTICE CONCERNING POWER CORD SELECTION

The power cord set for this unit has been enclosed and has been selected according to the country of destination and must be used to prevent electric shock. Use the following guidelines if it is necessary to replace the original cord set, or if the cord set is not enclosed.
The female receptacle of the cord set must meet IEC-60320 requirements and may look like (Figure A1 below):

Figure A1 Figure A2 

For the United States and Canada

In the United States and Canada the male plug is a NEMA5-15 style (Figure A2), UL Listed, and CSA Labeled. For units that are mounted on a desk or table, type SVT or SJT cord sets may be used. For units that sit on the floor, only SJT type cord sets may be used. The cord set must be selected according to the current rating for your unit. Please consult the table below for the selection criteria for power cords used in the United States and Canada.

Cord Type	Size of Conductors in Cord	Maximum Current Rating of Unit
SJT	18 AWG	10 Amps
	16 AWG	12 Amps
	14 AWG	12 Amps
SVT	18 AWG	10 Amps
	17 AWG	12 Amps

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and may cause harmful interference to radio communications if not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Warning

To assure continued FCC compliance, the user must use grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. If a BNC cable is going to be used, use only a shielded BNC (5) cable. Also, any unauthorized changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device.

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Installation

Congratulations on your purchase of a Westinghouse 20” LCD TV display. Relax as you, your friends and family will soon be enjoying movies, broadcasts, and/or popular games on this wonderful direct-view liquid crystal display.

Package Contents

Your LCD TV package includes:

- LCD TV Display
- Remote Control (2 AAA batteries are included)
- Cables
  - Power Cord
  - Antenna Cable
- Literature
  - Quick Install Instructions
  - User’s Manual
  - Warranty Card

Important

Save the original box and all packing material for future shipping needs.

1. Insert Remote Control Batteries

- Remove the battery cover.
- Insert the batteries, paying careful attention to match the corresponding (+) and (_) markings on the battery compartment.
- Re-attach the battery cover.

CAUTION

- Only use the specified AAA batteries.
- Do not mix new and old batteries. This may result in cracking or leakage, which may pose a fire risk or lead to personal injury.
- Insert batteries according to (+) and (_) markings. Inserting the batteries incorrectly may result in cracking or leakage, which may pose a fire risk or lead to personal injury.
- Dispose of the battery in accordance with local laws and regulations.
- Keep the battery away from children and pets.
- When the remote control will not to be used for an extended period, remove the batteries.

2. Rear Covers

- Remove the two plastic covers on the rear of the TV before attaching cables.
- Replace the covers as desired.

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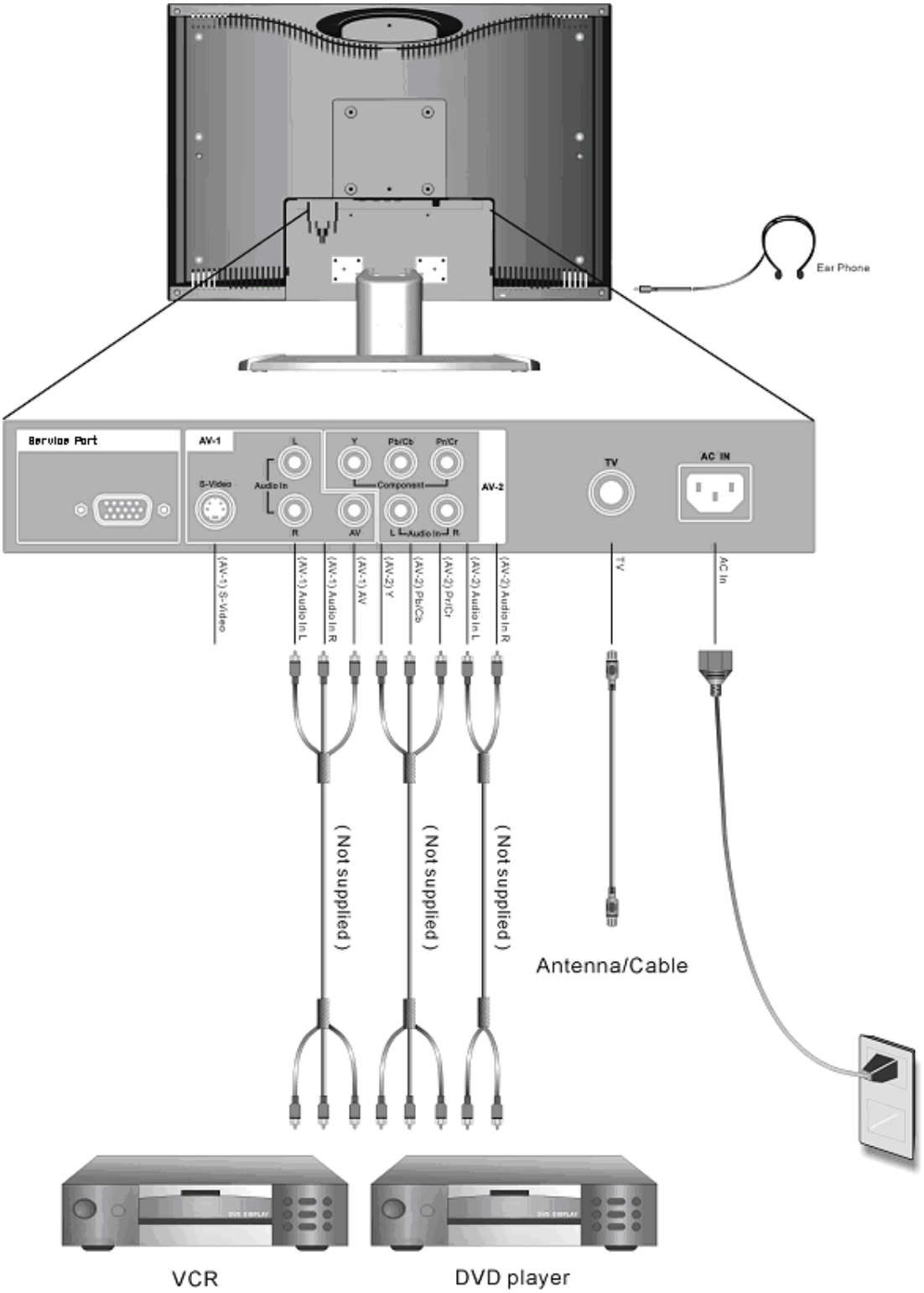
3. Connect Antenna, Cable, Video, S-Video, and/or YPbPr Cables

Connect video and audio cables from compatible devices to the back panel of the LCD TV.



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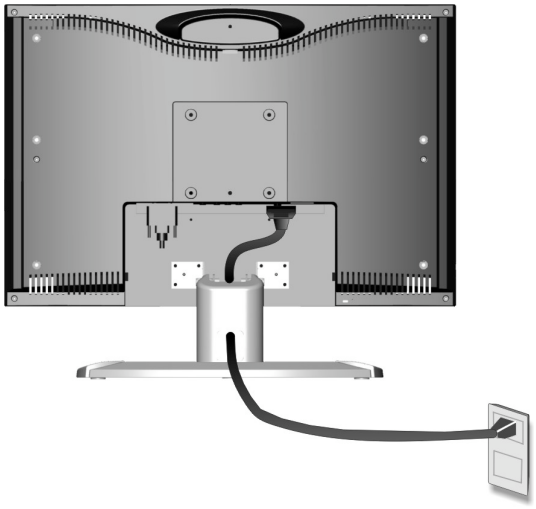
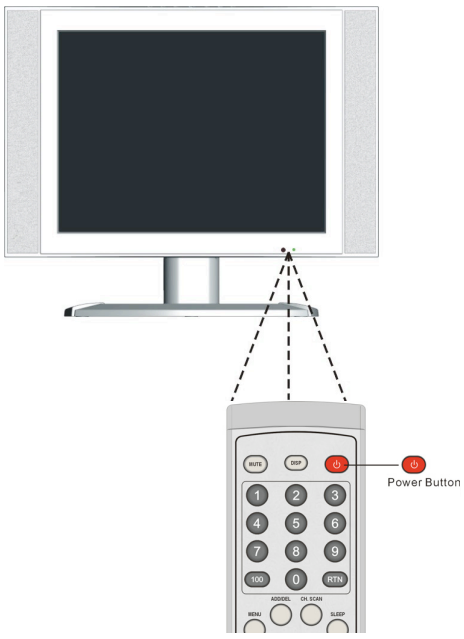
4. Connect power cables

Connect the power cord to the LCD TV and then to a properly grounded AC outlet.



5. Turn Power On

Press the power button on the top of the LCD TV display. Or press the power button on the remote control.



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6. Programming Channels

1. Select TV as the input using the TV button (17) on the remote.

2. Push TV/CATV button (14) to select the type of antenna or cable system attached to the TV.

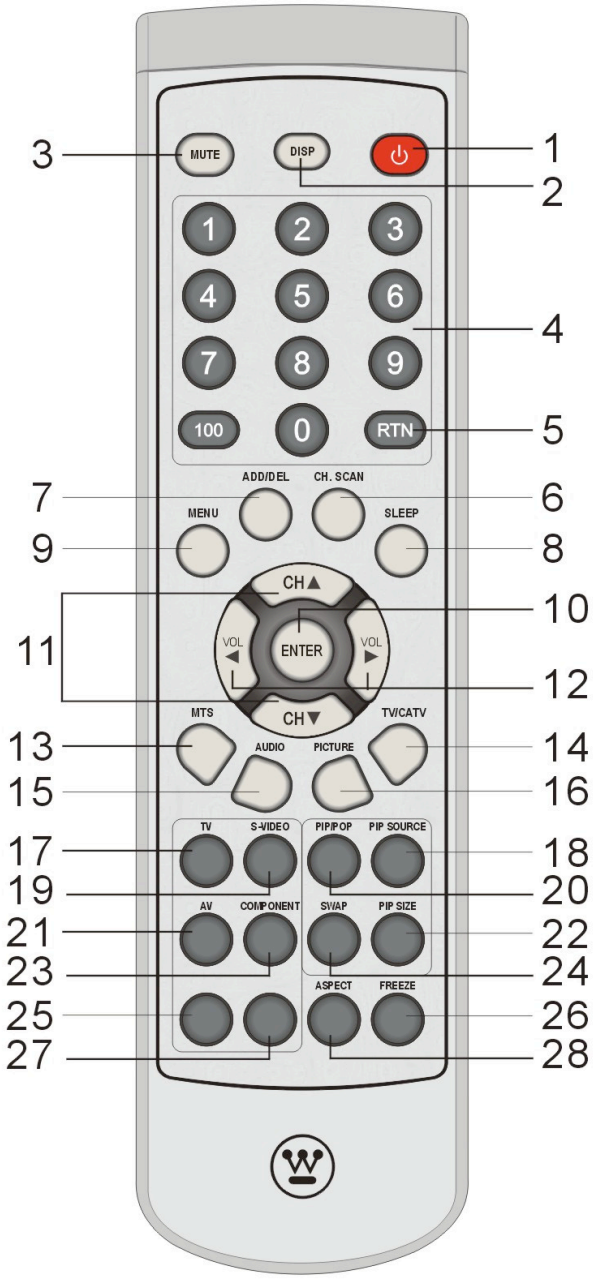
3. Push CH. SCAN (6) to automatically search and remember channels. Push ENTER (10) to confirm.

4. Switch channels by using the CH+ and CH- keys (11) on the remote.

5. Use ADD/DEL (7) button to personalize the list of channels. Push ENTER (10) to confirm.

6. Adjust volume (12) to taste.

7. You are all set!



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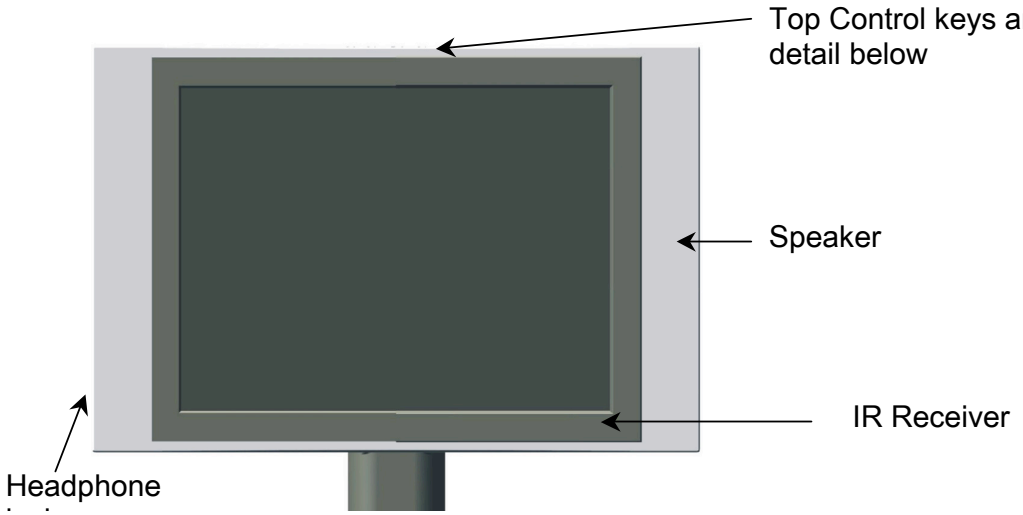
Controls & Connections

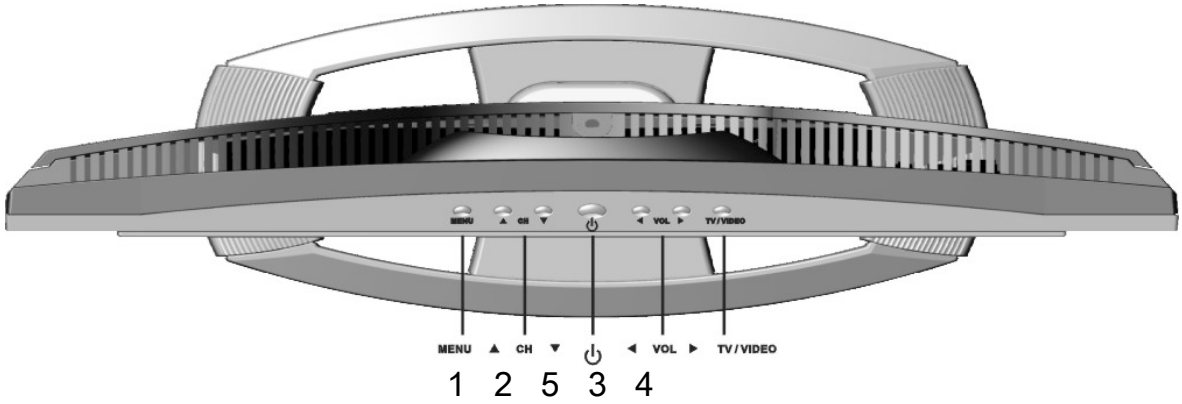
This section describes the front panel controls, rear and side connectors, and remote control in more detail.

Front View of the Product

Use the buttons on the front panel control (or included remote control) to display and adjust the On Screen Display (OSD). The OSD controls are explained at the top of the next page and are defined in “OSD Functions” on page 11.



Top Control keys



1 Menu	Turn OSD Menu ON/OFF
2 Channel + / -	Channel up/down when source is at TV or select a control while in OSD Menu.
3 Volume + / -	Increase/Decrease sound volume or adjust a highlighted control while in OSD Menu.
4 TV/Video	Toggle the input source from Component >> AV >> S-Video >> TV
5 Power Button	Power ON/OFF
6 IR Receiver	The Remote Control Receiver

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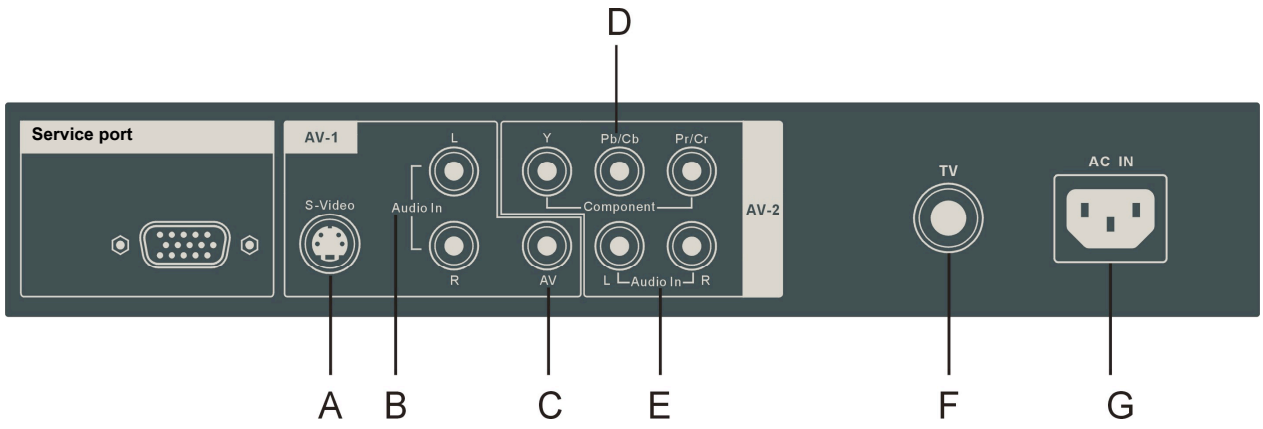
Rear View of the Product



AV-1

A. S-Video Input (black)
Connect to VCR or camcorder

B. Left (white) and right (red) audio inputs
Audio inputs are shared between the video and s-video inputs

C. Video Input (yellow)
Connect to a VCR or game consoles

AV-2

D. YPbPr Input (green, blue, red)
Connect to DVD players, DVD recorders or HDTV receiver

E. Left (white) and right (red) audio inputs
Connect to corresponding audio outputs for DVD or HDTV

TV

F. TV Input (silver)
Connect to antenna or cable service

AC IN (black)

G. 100-240VAC 50/60Hz, 1.5A Input
Connect to power

Service Port

Factory use only

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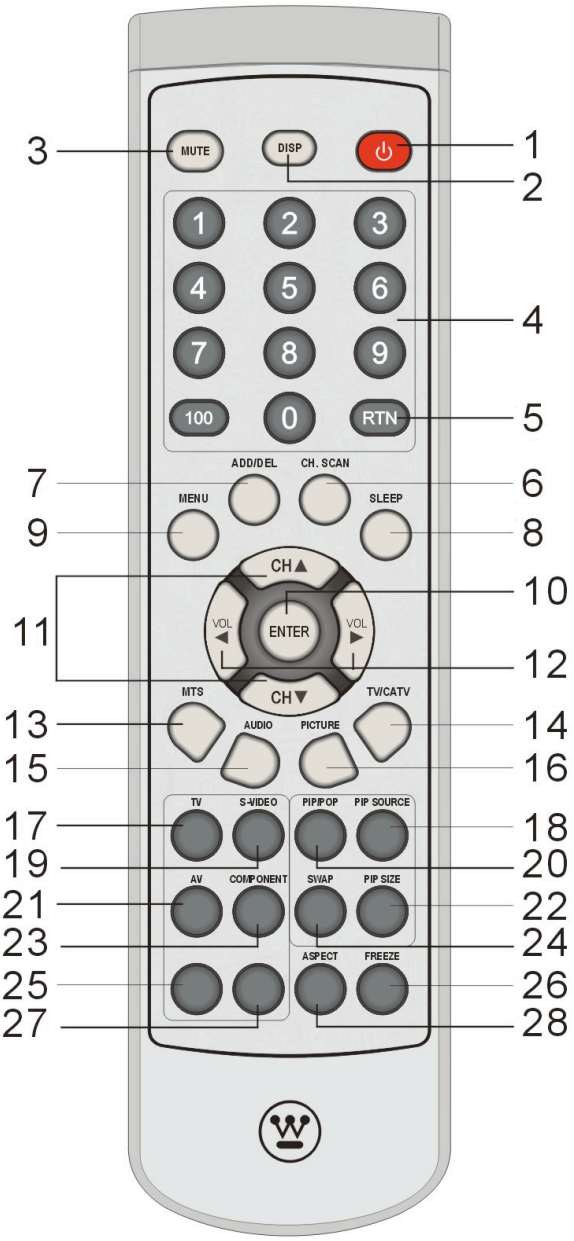
Remote Control

The Remote Control should be used within 5 meters of the LCD TV.

1. **POWER**
   Switch the power between on & off
2. **DISP**
   Display the source & channel information
3. **MUTE**
   Switch the sound between on & off
4. **CHANNEL NUMBER KEY 0-9, 100**
   Direct channel selection by number
5. **RTN**
   Recall the previous channel
6. **CH.SCAN**
   Automatically search & store TV channels
7. **ADD / DEL**
   Use to customize CH. SCAN results
8. **SLEEP**
   Use to shut off TV after a period of time
9. **MENU**
   Press to display or exit the OSD
10. **ENTER**
    Execute a command
11. **CHANNEL _/_**
    Channel Up/Down adjustment; OSD menu control
12. **VOLUME _/_**
    Volume Up/Down adjustment; OSD menu control
13. **MTS**
    Multi-language, stereo and mono selection
14. **TV/CATV**
    Set Air, STD, HRC or IRC cable service
15. **AUDIO**
    Adjust audio bass, treble and balance
16. **PICTURE**
    Quick Contrast, Brightness, Hue or Saturation adjustment
17. **TV**
    Push to select TV source
18. **PIP SOURCE**
    Select PIP Sub picture source
19. **S-VIDEO**
    Push to select S-Video source
20. **PIP / POP**
    Display Main & Sub picture
21. **AV**
    Push to select composite video source
22. **PIP SIZE**
    Adjust PIP Sub picture size
23. **COMPONENT**
    Push to select component video source
24. **SWAP**
    Switch PIP/POP Main/Sub source
25. **Not Used**
    No function for this model
26. **FREEZE**
    Freeze the screen
27. **Not Used**
    No function for this model
28. **ASPECT**
    Select between wide and normal aspect ratio for DVD movies.



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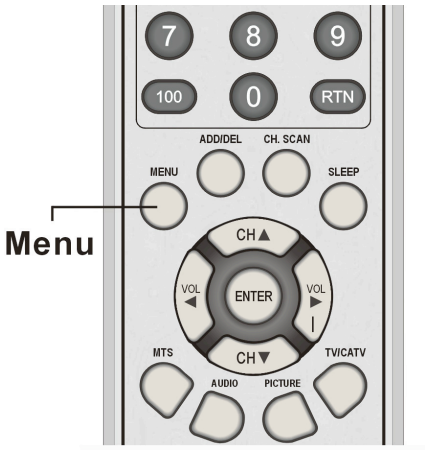
OSD Functions

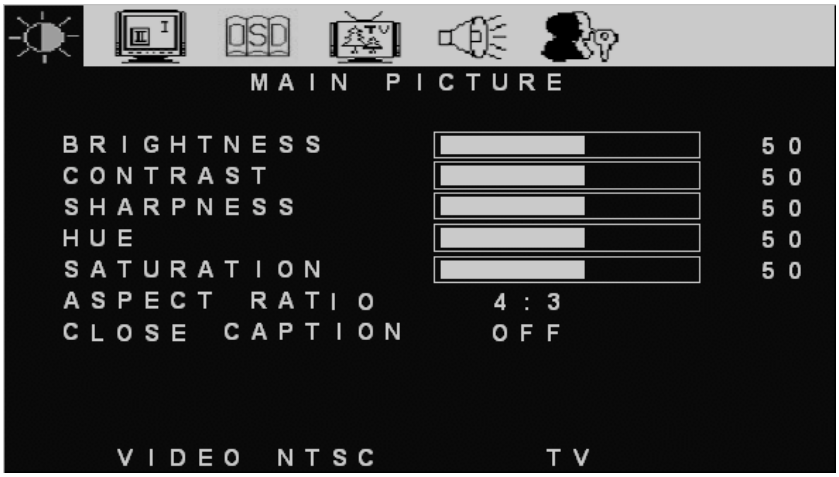
This section describes each on-screen display (OSD) command.

All the function settings for your LCD TV display are controlled either via the remote control or using the top control keys on the front panel.

To display the OSD main menu, press the Menu button on the front control keys or the MENU/EXIT key on the remote control. Use _/_ arrow keys to toggle the sub OSD menu display (Main Picture >> Main Input >> Multi Screen >> OSD >> TV >> Audio >> Parental Control). Use _/_ arrow keys to select the details of each sub OSD Menu, then use _/_ arrow keys to make the desired adjustment. Press the OK Key to confirm the desired selection and press the Menu button or MENU/EXIT key again to exit the OSD Menu.

The OSD menu display will disappear automatically after 30 seconds, if no action is taken.





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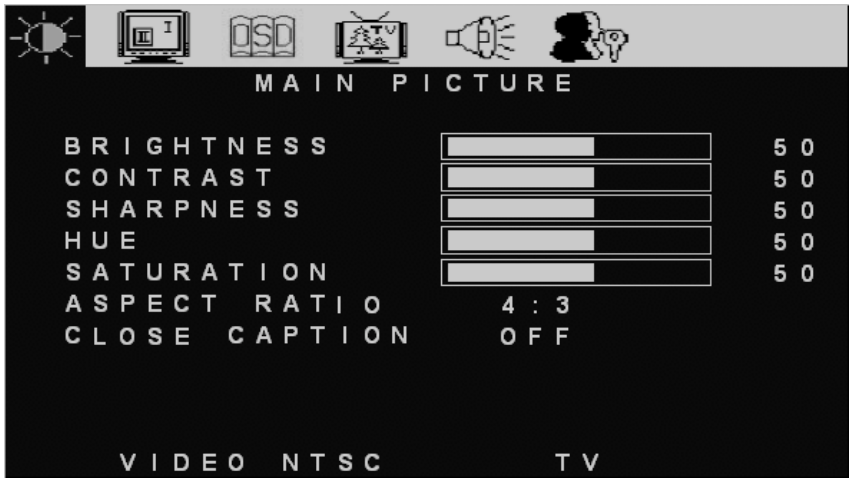
Source Input: TV or AV or S-Video

Main Picture Menu



Function Name	Explanation
Brightness	Adjust the Brightness of TV
Contrast	Adjust the Contrast of TV
Sharpness	Adjust the Video Sharpness
Hue	Adjust the Video Hue level
Saturation	Adjust the Video Saturation level
Aspect Ratio	Select TV display for 4:3 “normal” or 16:9 wide format content.
Close Caption	Turn Closed Caption on / off select the type of desired. “OFF”, “CC1”, “CC2”, “CC3”, “CC4”, “TT1”, “TT2”, “TT3”, “TT4”

Multi Screen Menu

Both PIP and POP functions are disabled.

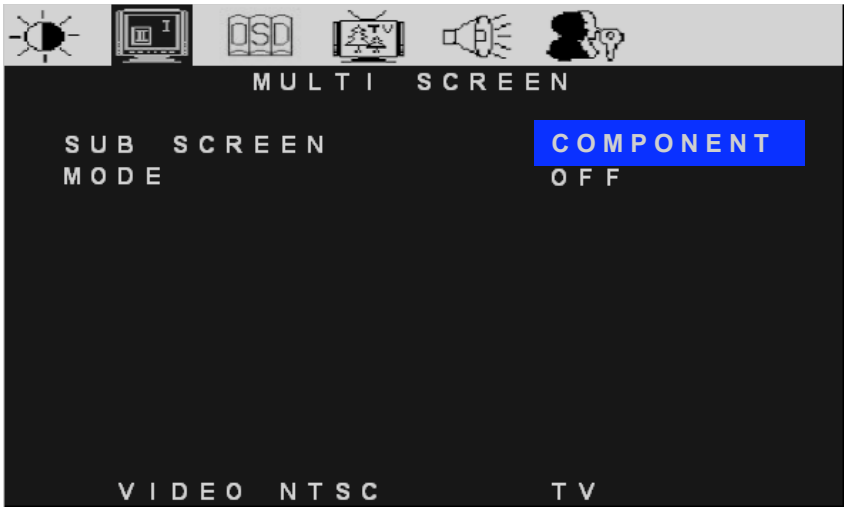


Figure 1 Multi Screen

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PIP function is enabled.

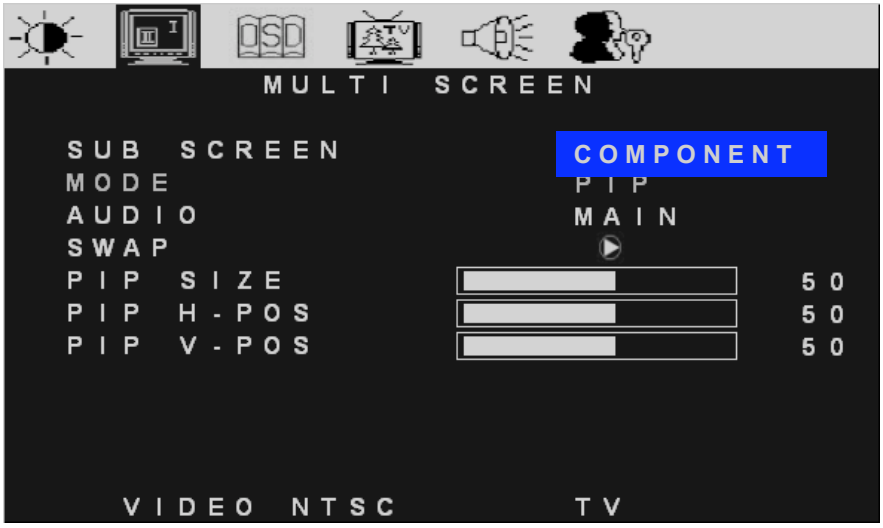

Figure 2 PIP Menu

POP function is enabled.

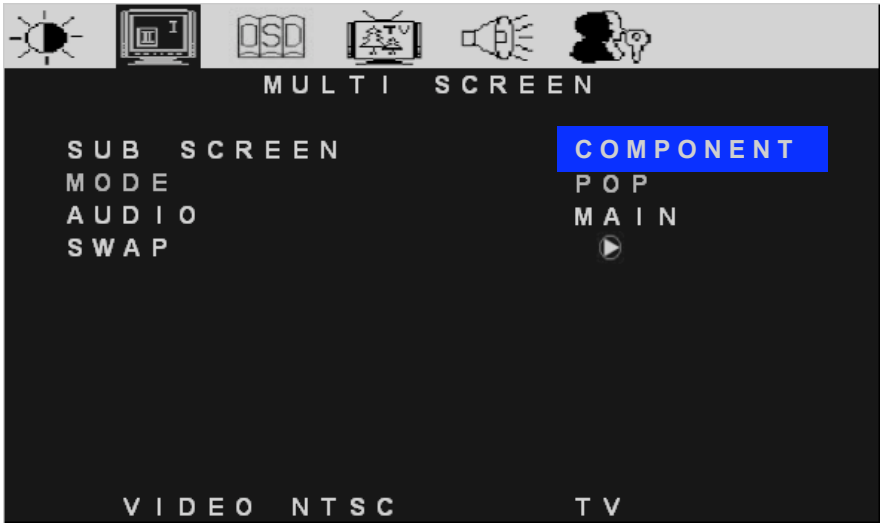

Figure 3 POP Menu

Function Name	Explanation
SUB SCREEN	Choose sub screen source, ⇨ If main screen (input) shown is TV, AV or S-VIDEO, then sub screen will have input selection of COMPONENT (YPbPr). ⇨ If main screen (input) shown is COMPONENT (YPbPr), then sub screen will have input choices of TV, AV or S-VIDEO
MODE	Select multi screen type: “OFF” / “PIP” / “POP”
AUDIO	Select audio output source (Main or Sub)
SWAP	Main screen and sub screen swap (Right key to execute)
PIP SIZE	Adjust Sub screen size
PIP H-POS	Adjust Sub screen Horizontal position
PIP V-POS	Adjust Sub screen Vertical position
POP	Display Side by Side Multi-Window

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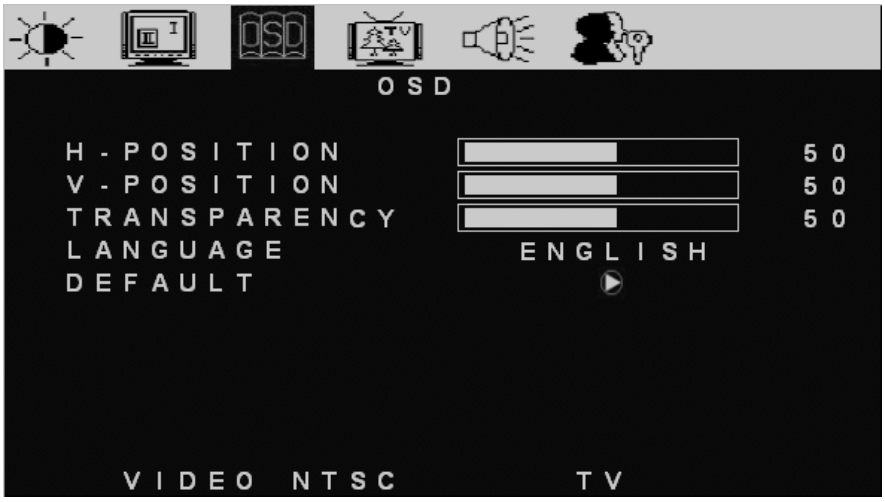
OSD Menu



Function Name	Explanation
H-POSITION	Adjust OSD on horizontal position
V-POSITION	Adjust OSD on vertical position
TRANSPARENCY	Adjust OSD on transparency level
LANGUAGE	Choose OSD language: English, Spanish, French, Traditional Chinese
DEFAULT	Recall factory default setting. When this function is executed, the screen will show the message

Figure 4. Default Message

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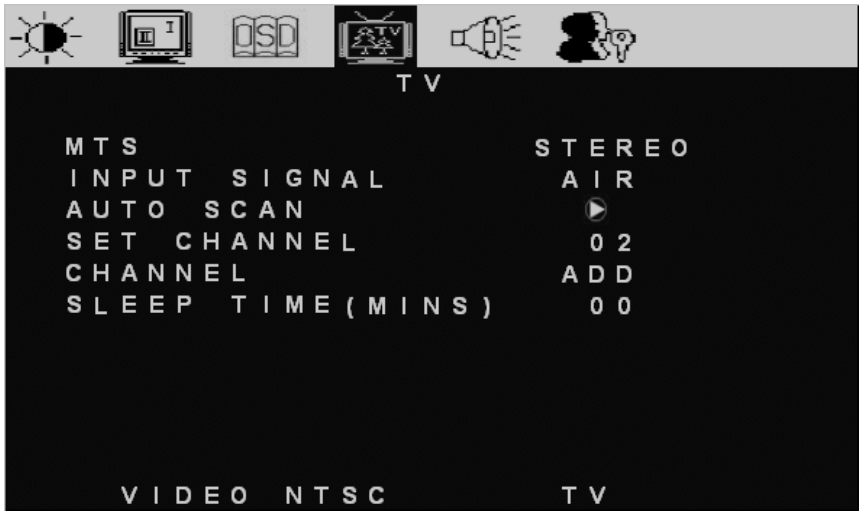
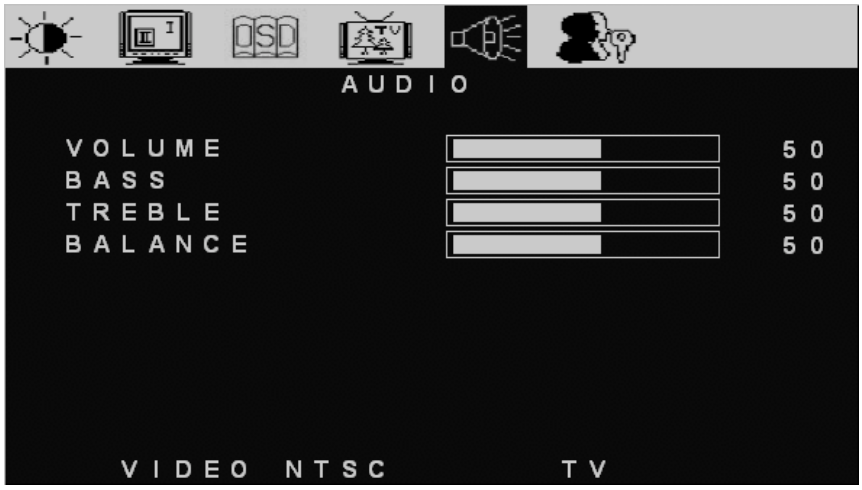
TV Menu



Function Name	Explanation
MTS	Selection included Stereo, Sap, Mono, Dual
INPUT SIGNAL	TV Selection are either STD (standard cable), HRC (HRC cable), IRC (IRC cable) or Air (Antenna)
AUTO SCAN	Channel Auto scan (Right arrow key to execute)
SET CHANNEL	Channel selection
CHANNEL	Channel selection to be added or deleted
SLEEP TIME(MINS)	Set the sleep timer on TV from 00, 30, 60, 90, 120 minutes

Audio Menu



Function Name	Explanation
VOLUME	Adjust Volume level
BASS	Adjust Bass level
TREBLE	Adjust Treble level
BALANCE	Adjust Left and Right speaker balance

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Parental Control Menu

To access the PARENTAL CONTROL menu (figure 5) enter your password (default is 0000), then press OK key to confirm selection. If the wrong password is entered, then refer to figure 6.

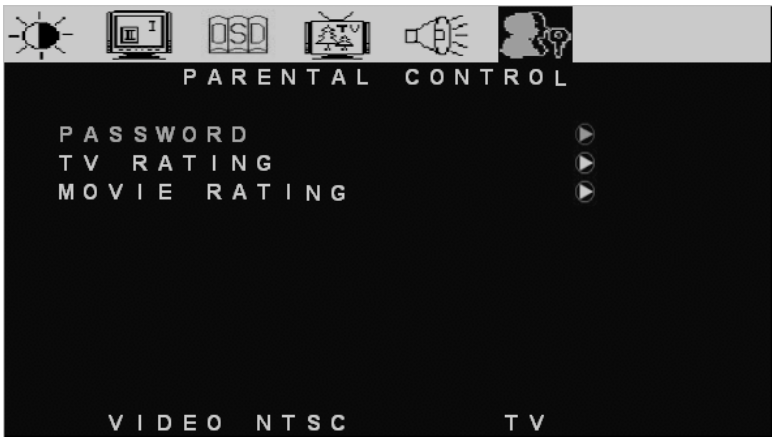

Figure 5. Key-In Password

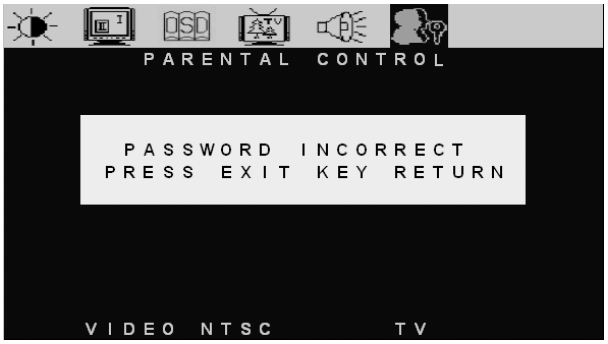

Figure 6. Password Incorrect Warning

Password Edit Menu

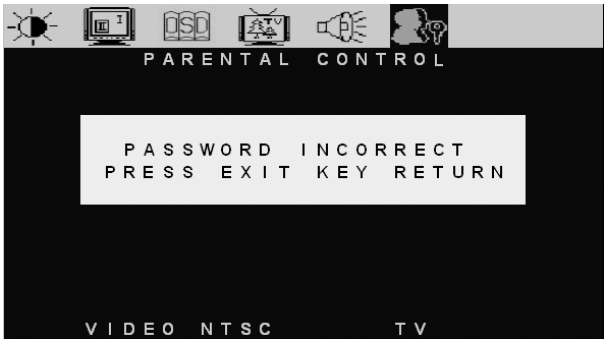

Figure 7. The warning message is displayed when the wrong OLD Password is entered

Function Name	Explanation
PASSWORD EDIT	Edit the password (Default is 0000)
OLD: _ _ _ _	Type the old password in 4 numbers, if the wrong password is entered, then refer to Figure 7
NEW: _ _ _ _	Type the new password in 4 numbers
CONFIRM: _ _ _ _	Re-type the new password for confirmation

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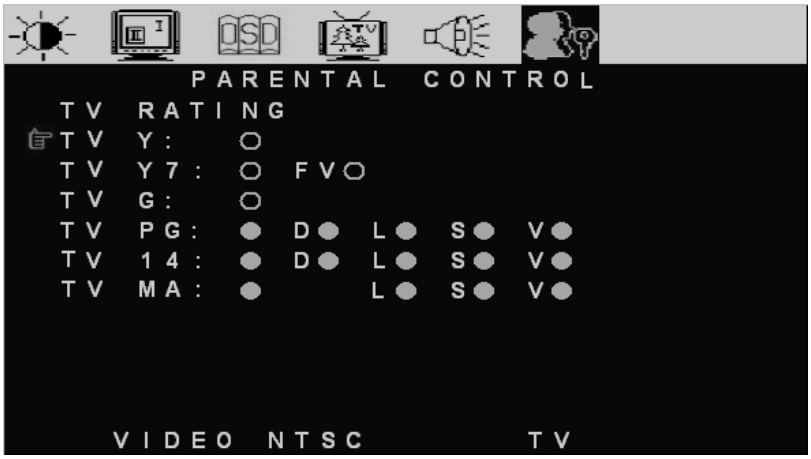
TV Rating Menu

Set the TV Ratings to block selected TV channels.



MOVIE Rating Menu

Set the Movie Ratings to block selected Movie channels.

Function Name		Explanation
TV RATING		<<< AGE >>>
	TV Y:	All Children
	TV Y7:	Directed to Older Children
	TV G:	General Audience
	TV PG:	Parental Guidance Suggested
	TV 14:	Parents Strongly Cautioned
	TV MA:	Mature Audience Only
		<<< CONTENT >>>
	FV:	Fantasy Violence
	D:	Suggestive Dialogue
	L:	Stronger Language
	S:	Sexual Situation
	V:	Violence
MOVIE RATING	G:	General audience
	PG:	Parental Guidance suggested
	PG 13:	Parents strongly cautioned
	R:	Restricted
	NC 17:	No one 17 and under admitted
	X:	Adult audience only

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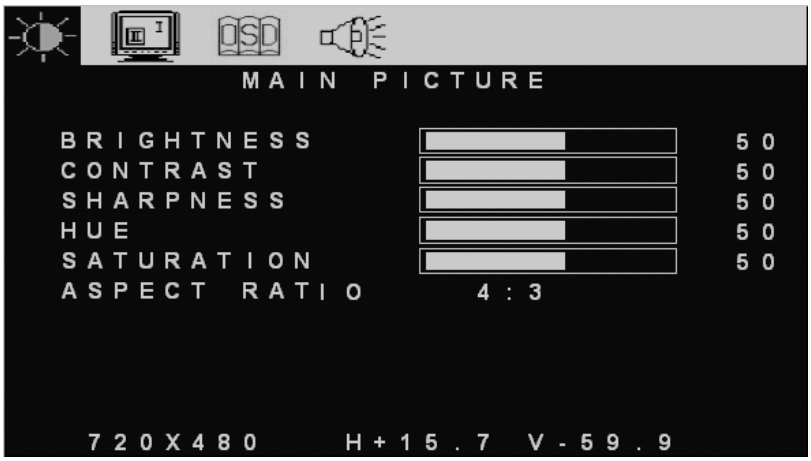
Source Input: Component

The component input video settings can be adjusted and saved separately from TV, Video and S-Video inputs.

Main Picture Menu



Function Name	Explanation
Brightness	**Brightness adjustment**
Contrast	**Contrast adjustment**
Sharpness	**Adjust the Video Sharpness**
Hue	**Adjust the Video Hue level**
Saturation	**Adjust the Video Saturation level**
Aspect Ratio	**Select TV display on “4:3” / “16:9”**

For the Main Input, Multi Screen, OSD, and Audio Menu operation, please refer to Pages 12-17.

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Appendix

This section lists the product specifications and common problems with corresponding solutions.

Specifications

Panel	Type	20.1" (full 20.1" viewable diagonal area), TFT (Thin Film Transistor), Active Matrix VGA LCD, 640RGB*480 vertical stripe
	Surface treatment	Anti-reflective coating + Anti-glare coating
Viewing Angles		160° (H) / 140° (V)
Input Signal	Video	TV system antenna / NSTC in US and TW
		Composite Video * 1
		S–Video * 1
		Component Video * 1 (YCbCr, YPbPr)
	Audio	RCA (L/R) Stereo * 2
Speaker Output		5W * 2
Power	Voltage	100-240 VAC, 50/60 Hz (auto switch), 1.5A
Operating Conditions	Temperature	32° F to + 95° F (0° C to + 35° C)
	Humidity	20% to 90% (no condensation)
	Altitude	To 3,000 Meter
Storage Conditions	Temperature	-4° F to + 140° F (-20° C to + 60° C)
	Humidity	5% to 90% (no condensation)
	Altitude	To 12,000 Meter
Dimensions	Physical	573 mm (W) x 472 mm (H) x 227.5 mm (D)
		22.76" (W) x 18.58” (H) x 8.96” (D)
Weight	Net	19.8 lb (9.0 kg)
Regulations		FCC-B, UL, c-UL,
Power Saving	On	<73W (Blue LED)
Modes	Active Off	<5W (LED OFF)

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Troubleshooting

No power

- Make sure DC power button is ON (Green LED)
- Make sure AC power cord is securely connected to the AC socket
- Plug another electrical device (like a radio) to the power outlet to verify that the outlet is supplying the proper voltage

Power is ON but no screen image

- Adjust brightness and contrast
- Check Source settings

Wrong or abnormal colors

- If any colors (red, green, or blue) are missing, check the video cable to make sure it is securely connected. Loose or broken pins in the cable connector could cause an improper connection
- The red connector for right audio is easily confused with the red Pr connector in YPbPr component video input. Double check that they are correctly attached.
- Remove distribution amplifiers from the signal path.

Snow appears on screen

- Check your antenna connection
- Remove unnecessary signal splitters to improve signal quality
- Replace poor or worn cables to properly match 75 ohm impedance
- Check TV / CATV selection

No sound

- Check your audio connection
- Press MUTE on the remote control again, so that MUTE disappears from the screen
- Check your audio settings, your TV audio may be set to SAP or minimum
- Press the Volume + (Up) key on your remote control
- Make sure that headphones are not connected

Remote control does not work

- Make sure batteries are inserted correctly
- Replace old or worn batteries

Remote control code not found in “universal” remote

- Purchase a separate “learning” remote control

How do I mount the LCD TV on a wall

- Remove the rear cover plate to expose 4 screw holes on 75mm VESA hole pattern
- Use professional installation to reduce risk of injury and damage

How do I find more help?

- www.westinghousedigital.com
- Contact customer service at (866) 287-5555 or service@westinghousedigital.com

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